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Course Outline

SCBI 109 Integrated Biology (3 credits), First Semester 2016

Date & Time: Friday 9.30-12.20 (3 hours/week)

Students : Actuarial Science (~72 students) ***Room N101***

Week	Lecture Topics	Date	Instructor
1-2	1. The Nature of Living Things 1.1 What Makes Something Alive ? 1.2 The Organization of Life 1.3 The Cell Theory 1.4 People Behind the Science : Mathias Jakob Schleiden and Theodor Schwann 1.5 Major Cell Types - The Prokaryotic - Eukaryotic Cells 1.6 Transport Across Membranes - Passive Transport - Active Transport - Exocytosis and Endocytosis	19, 26 Aug	Theeraporn
3	2. The Only Diet You Will Ever Need 2.1 Nutrients - Macronutrients - Micronutrients 2.2 Sturcture and Function of Macromolecules 2.3 Enzymes and Metabolism - Enzymes - Calories and Metabolic Rate 2.4 Body Fat and Health - Evaluating How Much Body Fat is Healthful - Obesity - Anorexia and Bulimia	2 Sep	Theeraporn
5-6	3. Is the Earth Warming ? 3.1 The Greenhouse Effect 3.2 Cellular Respiration - Structure and Function of ATP - General Overiew of Cellular Respiration - Glycolysis Krebs Cycle, and Electron Transport - Global Warming - Global Warming and Cellular Respiration	9, 16 Sep	Pahol

	3.3 Photosynthesis - A General Overview of Photosynthesis - The Light Reactions and the Calvin Cycle - Global Warming and Photosynthesis 3.4 Decreasing the Effects of Global Warming		
6	6. Gene and Heredity 4.1 Cell cycle and life cycles of living organisms 4.2 Gamete production and genetic variations 4.3 Chromosome and inheritance 4.4 Relationship of gene, chromosome and Mendel's Laws	23 Sep	Theeraporn
7	5. Molecular Basis of the Gene 5.1 DNA codes and passage of traits 5.2 Gene structure and function 5.3 Gene regulation and control of gene expression	30 Sep	Theeraporn
8	6. Genetic Engineering and Biotechnology 6.1 Genetic engineering technique and human cloning 6.2 GMO products and Biotechnology 6.3 DNA technology and applications in agriculture and medicine	7 Oct	Theeraporn
9	Midterm Examination (contents of wks 1 - 8)	10-14 Oct	Staff
10	7. Nature of Ecosytems 7.1 The Biotic Components of Ecosystems 7.2 Energy Flow 7.3 Global Biogeochemical Cycles	21 Oct	Prayad
11	8. Environmental Concerns 8.1 Human Use of Resources and Pollution 8.2 Impact On Biodiversity 8.3 Working Toward a Sustainable Society	28 Oct	Prayad
12-13	9. Evolution 9.1 Where Did We Come From ? 9.2 An Evolving Enemy 9.3 Who am I ?	4, 11 Nov	Nuttaphon
14-16	10. Prospecting for Biological Gold 10.1 Biological Classification - The Problem with Common Names - Taxonomy - Binomial System of Nomenclature - Organizing Species into Logical Groups	18, 25 Nov, 2 Dec	Pahol

	10.2 The Diversity of Life 10.3 Value of Biodiversity		
17	Final Examination (contents of wks 10 – 15)	6-16 Dec	Staff

Evaluation criteria

Midterm examination	***40 %***
Final examination	***35 %***
Attendance, Report, Presentation	***25 %***
Total	***100 %***

Reference(s)

1. ***Belk C, and Borden V, editors. Biology : science for life. 2nd ed. New Jersey (NY) : Pearson Education; 2007.***
2. ***Campbell NA, Reece JB, Taylor MR, Simon EJ. Biology : concepts & connections. 5th ed. San Francisco (CA) : Benjamin Cummings; 2006.***
3. ***Other Biology books and internet resources***

Instructor (s)

Associate Professor Theeraporn Puntheeranurak
Telephone : 02-201-5255 E-mail : theeraporn.pun@mahidol.ac.th
Dr.Pahol Kosiyachinda
Telephone : 02-201-5277 E-mail : pahol.kos@mahidol.ac.th
Associate Professor Prayad Pokethitiyook
Telephone : 02-201-5479 E-mail : prayad.pok@mahidol.ac.th
Dr.Nuttaphon Onpan
Telephone : 02-201-5478 E-mail : nuttaphon.onp@mahidol.ac.th

Course Coordinator

Associate Professor Theeraporn Puntheeranurak
Telephone : 02-201-5255 E-mail : theeraporn.pun@mahidol.ac.th